(No Model.) 2 Sheets—Sheet 1.

W. F. OLIN.

GRAIN HARVESTER.

No. 342,969. Patented June 1, 1886.

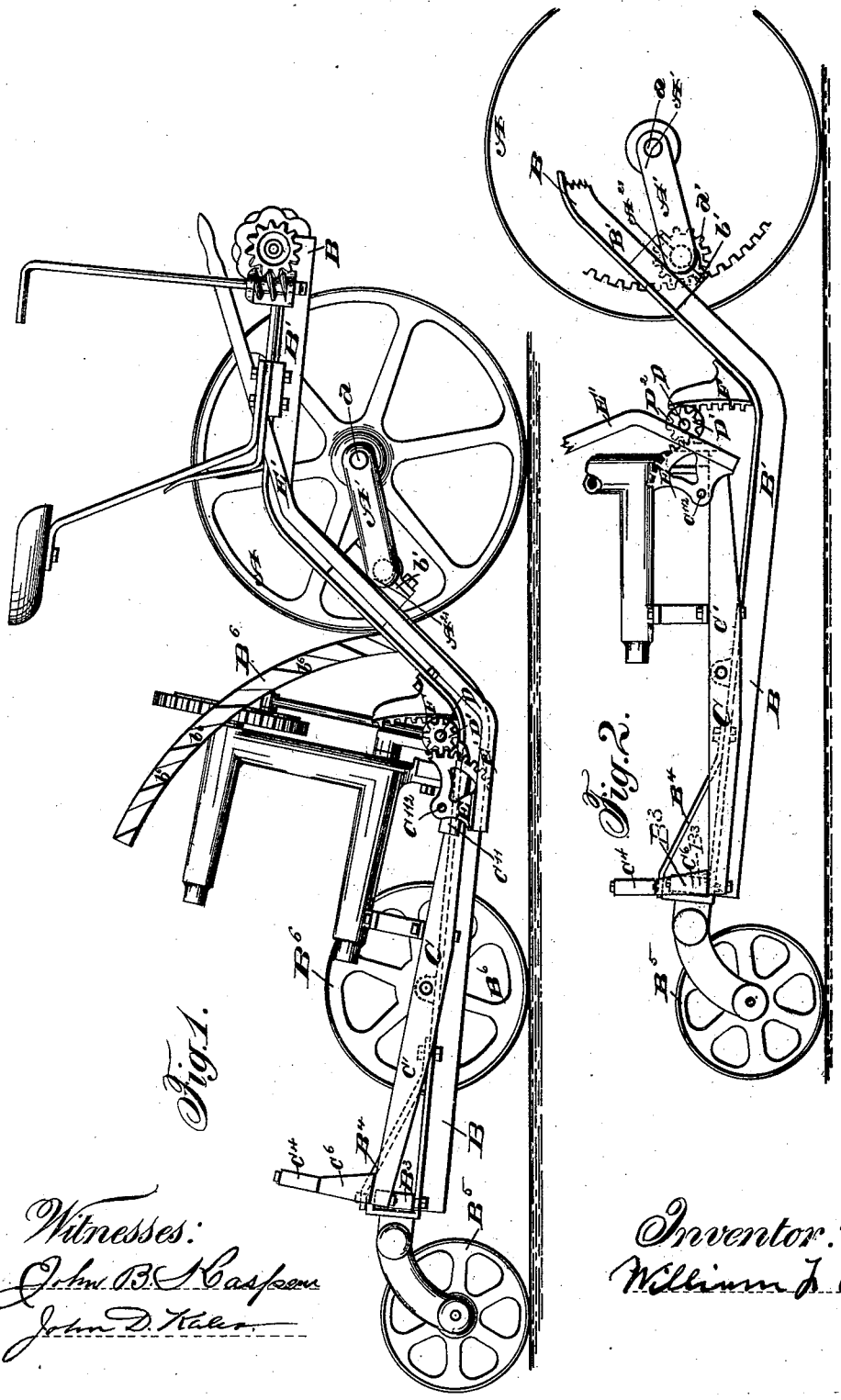

Fig. 1.

Fig. 2.

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(No Model.) 2 Sheets—Sheet 2.

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Fig. 3.

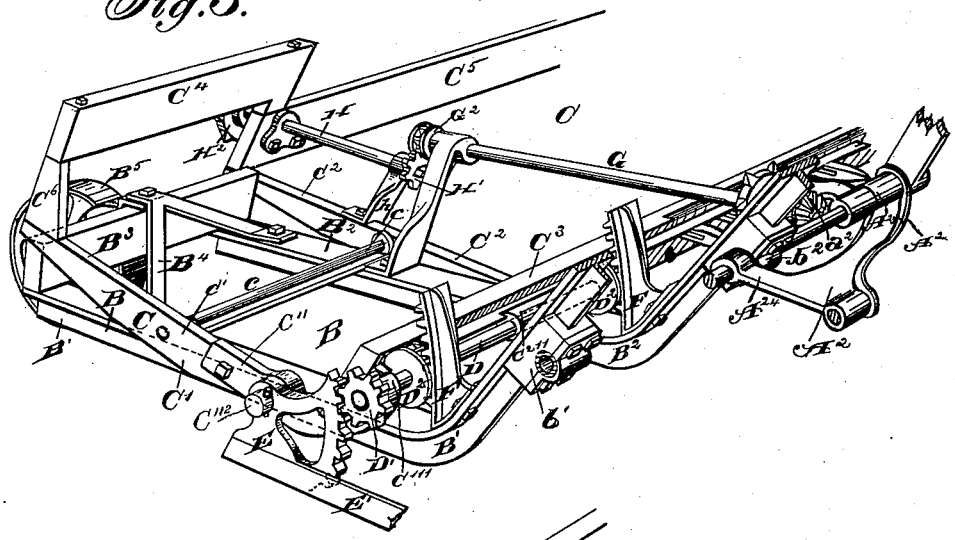


Fig. 5

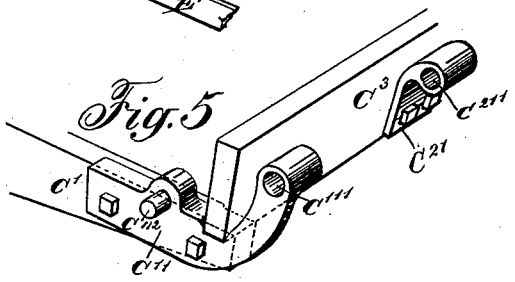
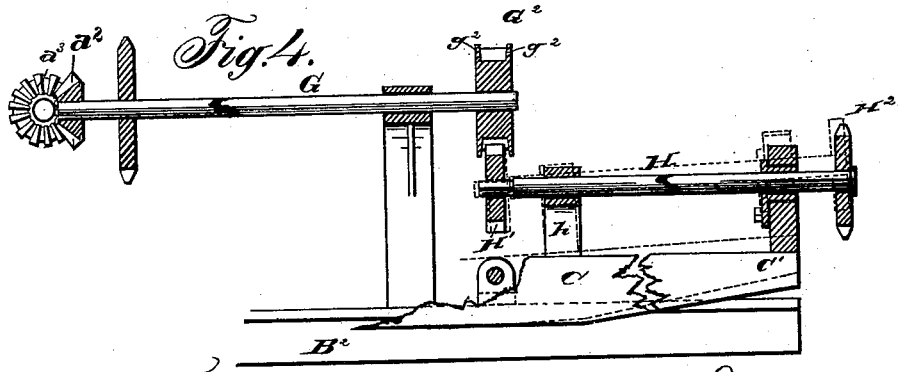


Fig. 4.



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UNITED STATES PATENT OFFICE.

WILLIAM F. OLIN, OF CHICAGO, ILLINOIS.

GRAIN-HARVESTER.

SPECIFICATION forming part of Letters Patent No. 342,969, dated June 1, 1886.

Application filed July 6, 1885. Serial No. 170,786. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM F. OLIN, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Grain-Harvesters, which are fully set out in the following specification.

The purpose of this invention is to provide an improved mechanism for tilting or changing the inclination of the platform and sickle of a harvesting-machine by rocking said platform over a pivot on the principal frame instead of rocking the entire frame bodily over the ground contact of the wheels. It comprises the platform-frame sustaining the finger-bar and binder and platform-conveyer, and pivoted on the principal frame, the means for rocking it over its said pivot at will, and the means for communicating power from the shafts on the principal frame to the mechanism on the platform-frame. As illustrated, and hereinafter described, its details are adapted to a harvester having the vertical plane of the sickle in the rear of the drive-wheel, and the principal frame pivoted to a crank on the drive-wheel axle or driving-frame and raised and lowered by the swinging of said crank.

In the drawings, Figure 1 is an outer side elevation of the several frames and drive-wheel, showing the platform-frame tilted down in front to the lowest point. Fig. 2 is a similar view, unnecessary parts being broken away, showing the platform-frame horizontal. Fig. 3 is a perspective from the front outer corner, showing the principal and platform frames and the gearing connecting their respective shafts. Fig. 4 is a sectional elevation of the shafts and their bearings and intermeshing gear-wheels, by which power is transmitted from the principal to the platform frame at all inclinations of the platform. Fig. 5 is a detail perspective of the bearings on the platform-frame of the shaft which carries the pinion by which the tilting movement is communicated.

A is the drive-wheel. *a* is the main axle; A′ A^2, cranks rigid with the main axle, and with it constituting the drive-wheel frame.

B is the principal frame. It comprises the parallel bars B′ and B^2, preferably of iron, and extending, one on each side of the drive-wheel, from a point in front of said wheel back horizontally above the axle to a point in the rear of the vertical plane of the axle, then obliquely back and down nearly to the ground, then back and with a slight upward slope to the rear of the platform. The said parallel bars are connected at their rear ends by the cross-beam B^3 and the V-shaped brace B^4, connected to said bars and to said cross-beam. Other cross beams or ties may be provided. The frame B is pivoted to the wrists A^{21} A^{22} of the crank-arms of the drive-wheel frame A, and raised and lowered in front by any mechanism which will swing said cranks. The boxes b' b^2 on the bars B′ B^2 afford bearings for the wrists A^{21} A^{22}, respectively. The wrist A^{22} is produced through the two branches A^{23} and A^{24} of the yoke-crank A^2, and is journaled therein as a shaft, and carries the main gear-pinion a' and the bevel-pinion a^2, by which the power is communicated from the drive-wheel to the shafts on the principal frame. The principal frame B is sustained at the rear by the caster-wheel B^5.

C is the platform-frame, comprising the two parallel bars C′ and C^2, connected rigidly by the finger-bar or front sill, C^3, and by the rear cross-bar, C^4, the rear sill, C^5, being interposed between the bar C^2 and the cross-bar C^4, and bound by the same bolt which secures the latter, and the bolster C^6 being interposed and similarly bound between the outer end of the cross-bar C^4 and the bar C′. About midway between the front and rear sills the frame C is pivoted to the frame B, the horizontal shaft *c*, provided with suitable bearings in both frames, serving as the pivot. To the bar C′, at its front end, is secured the clip C^{11}, provided with the horizontal transverse bearing-box C^{111} and the stud-pivot C^{112}, for uses hereinafter explained. At suitable distance inward from the clip C^{11} there is secured to the front sill, C^3, the clip C^{21}, having the bearing-box C^{211} in line with the box C^{111}. In the boxes C^{111} and C^{211} is journaled the shaft D, having outside the clip C^{11} the pinion D′, and between the clips C^{11} and C^{21} the pinions D^2, all fixed on said shaft. Upon the stud-pivot C^{112} is pivoted at its center the gear-sector E, meshing with the pinion D′, and provided with the rigid handle E′, which is extended up within reach

of the driver's seat. Upon each of the bars B′ and B² is fixed a concave segment-rack, F, whose center of curvature is the axis of the pivotal shaft *c*. Said racks F are respectively engaged by the pinion D². To the principal frame is secured at any convenient point the notched segment B⁶, whose lateral notches *b*⁶ are adapted to receive and detain the arm or handle E′. Upon the principal frame B is journaled the shaft G, deriving motion from the bevel-pinion *a*³ through the bevel-pinion *a*², fixed on said shaft, and communicating motion by a chain over the sprocket-wheel G′, fixed on its forward end, and having fixed on its rear end the pinion G². Upon the platform-frame is journaled the shaft H, having one bearing in a bracket, *h*, fixed on the bar L², and another in a suitable box on the rear sill, C⁵. In front of the forward bearing in the bracket *h* it is squared, and has fitted upon such squared portion and adapted to slide on it the pinion H′, meshing with and driven by the pinion G². Upon the rear end it has the sprocket-wheel H², to drive the platform-conveyer and other mechanism mounted on the platform-frame. The pinion G² has the flanges *g*² *g*², adapted to embrace the pinion H′ and retain the two pinions in mesh, notwithstanding any longitudinal movement of either shaft.

To rock the platform-frame on its pivot—the shaft *c*—the driver, by means of the handle E′, rocks the gear-sector E over its pivot, thereby revolving the pinion D′ and the shaft D and the pinion D², which latter, engaging with the concave racks F, "climb" the latter, and carry up their shaft D and the front edge of the platform-frame C, to which its journal-bearings C¹¹¹ and C²¹¹ are secured, and thus give to the platform any desired inclination or tilt within the range of the arc of the rack F. As the platform-frame C is thus rocked over its pivot *c*, the position of the shaft H and its bearings and the sprocket-wheel H² changes, as illustrated by the full and the dotted outlines in Fig. 4. In the course of this change of position the pinion H′ slides on the squared portion of the shaft H, and is retained in mesh with the pinion G² by the flanges *g*² *g*² of the latter. The vertical plane of these gears G² and H′ is preferably, as illustrated, the vertical plane of the shaft *c*, so that the rocking of the frame C over that axis does not appreciably alter the distance between the centers of said gears. The grain end of the platform-frame is supported by the grain-wheel B⁶, whose axle is in the same vertical plane with the pivot of the said platform-frame, and, as shown, is in line with said pivot, this being its ordinary working position even when made adjustable vertically.

I claim—

1. In a harvesting-machine, in combination with the main frame, a platform-frame carrying the cutting mechanism pivoted on said main frame, segment-rack on the main frame whose center of curvature is the axis of said pivot, a gear-segment pivoted on the platform-frame and provided with a suitable handle, a shaft journaled on the platform-frame parallel with the pivot thereof, and gear-pinions thereon meshing, respectively, with the segment-rack on the main frame and the gear-segment on the platform-frame, all operating substantially as and for the purpose set forth.

2. In a harvesting-machine, in combination with the main frame, the platform-frame pivoted and wholly sustained on said main frame, a driving-shaft journaled on the main frame transversely to the vertical plane of the pivot of the platform-frame, a gear-wheel on said shaft in the vertical plane of the said pivot, a shaft journaled on the platform-frame, and having a pinion meshing with and driven by the pinion first mentioned, one of said pinions being adapted to slide on its shaft, and the other being provided with flanges embracing the teeth of the sliding gear, substantially as and for the purpose set forth.

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Witnesses:
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